OIPE

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

```
C--> 2 <140> CURRENT APPLICATION NUMBER: US/09/854,864
C--> 2 <141> CURRENT FILING DATE: 2001-09-11
W--> 2 <151> PRIOR FILING DATE: 1999-09-10
W--> 0 <110> APPLICANT:
W--> 0 <120> TITLE INVENTION:
W--> 0 <130> FILE REFERENCE:
     4 <150> PRIOR APPLICATION NUMBER: 60/128,689
     5 <151> PRIOR FILING DATE: 1999-04-09
     7 <160> NUMBER OF SEQ ID NOS: 165
     9 <170> SOFTWARE: PatentIn Ver. 2.0
```

[Handwritten: Paton 2.0 Errors: Paton 2.0 sometimes deletes Field 110 and Field 120. These headers and fields are mandatory.

Contact Robert Wax at (703) 306 4216 or 703 308 4119. OK]

ERRORED SEQUENCES

```
1952 <210> SEQ ID NO: 16
1953 <211> LENGTH: 2110
1954 <212> TYPE: PRT
1955 <213> ORGANISM: Pasteurella multocida
1957 <400> SEQUENCE: 16
1958 Met Gln Pro Ala Gln Glu His Cys Gln Arg Ile Asn Asn Ile Val Asn
1959   1               5                  10                  15
1961 Gln Glu Asn Gly Leu Phe His Thr Leu Gly Asn Met Met Leu Glu Ala
1962              20                  25                  30
1964 Glu Arg Ser Val Tyr Asn Ile Gly Asp Ile Tyr Ala Ser Lys Lys Leu
1965          35                  40                  45
1967 Thr Val His Thr His Asn Leu Ile Asn Asp Val Arg Leu Ser Gly Asn
1968      50                  55                  60
1970 Val Ser Tyr Lys Pro Ile Gly Ser Ser Arg Asp Tyr Asp Ile Ser Arg
1971  65                  70                  75                  80
1973 Val Ala Val His Gly Trp His Asn Asn Val Tyr Lys Leu Asn Leu Asn
1974              85                  90                  95
1976 Leu Gln Glu Gln Asp Lys Thr Asp Ile Lys Val Val Lys Met Gly Ala
1977             100                 105                 110
1979 Ile Arg Ser Asp Gly Asp Phe Asp Phe Lys Gly Ile Lys Ala Thr Ser
1980             115                 120                 125
1982 Ser Glu Ser Lys Pro Gln Leu Ile Asn His Gly Leu Ile Asn Val Lys
1983         130                 135                 140
1985 Gly Thr Phe Asn Ala Glu Ala Asp Gln Val Val Asn Gln Met Lys Ala
1986 145                 150                 155                 160
1988 Phe Asn Gln Asn Ala Leu Ala Ser Val Phe Lys Asn Pro Ala Lys Ile
1989                 165                 170                 175
1991 Thr Met Tyr Tyr Gln Pro Leu Thr Arg Tyr Ile Trp Thr Pro Leu Ser
1992             180                 185                 190
1994 Gly Asn Ala Ser Arg Glu Phe Asn Asn Leu Glu Ser Phe Leu Asp Ala
1995             195                 200                 205
1997 Leu Phe Gly Ser Thr Thr Ile Leu Lys Ser Ser Phe Tyr Ser Thr Glu
1998         210                 215                 220
```

[Handwritten: Erroneous Sequence Listing does not match diskette content]

```
2000 Asn Phe Ser Ala Tyr Gln Leu Leu Ser His Ile Gln His Ser Pro Met
2001 225                 230             235             240
2003 Tyr Gln Lys Ala Met Ala Gln Val Phe Gly Ala Glu Trp His Ser Lys
2004             245             250             255
2006 Ser Tyr Asp Glu Met Arg Asn Lys Trp Lys Ser Phe Lys Glu Asn Pro
2007         260             265             270
2009 Thr Asp Phe Ile Tyr Tyr Pro Ser Glu Lys Ala Lys Ile Leu Ala Gly
2010         275             280             285
2012 Lys Leu Glu Gly Lys Leu Thr Thr Leu Gln Asn Gly Glu Tyr Ala Glu
2013     290             295             300
2015 Arg Gly Lys Phe Asp Glu Ser Ile Gln Ile Gly Lys His Gln Leu Ser
2016 305             310             315             320
2018 Leu Pro Ser Val Glu Leu Lys Ala Glu Phe Ser Asp Lys Glu Arg Leu
2019             325             330             335
2021 Glu Glu Asp Gly Val Asp Leu Ser Ser Ile Ala Glu Leu Leu Glu Met
2022         340             345             350
2024 Pro Asn Leu Phe Ile Asp Asn Ser Ile Gln Leu Glu Lys Lys Lys Leu
2025         355             360             365
2027 Ser Pro Ile Glu Asp Leu Asp Glu Glu Pro Arg Lys Asn Leu Asp Ile
2028     370             375             380
2030 Glu Glu Ser His Ser Asn Ser Ser Asp Asp Val Leu Ser Met Asn Asp
2031 385             390             395             400
2033 Asp Glu Ser Asp Thr Asp Asp Ser Lys Trp Ser Met Gly Asn Asp Glu
2034             405             410             415
2036 Lys Glu Met Pro Asp Asp Lys Leu Gly Ile Ser Arg Asp Asp Arg Gly
2037         420             425             430
2039 Asn Lys Pro Pro Arg Thr Asp Pro Thr Val Asp Tyr Leu Asn Pro Asp
2040         435             440             445
2042 Glu Phe Phe Glu Asn Gly Tyr Leu Leu Asn Glu Leu Leu Gln Glu Leu
2043     450             455             460
2045 Gly Glu Glu Pro Leu Leu Lys Glu Gly Glu Asp His Phe Lys Arg Ser
2046 465             470             475             480
2048 Thr Asn Leu Val Arg Leu Gly Glu Arg Asp Arg Gln Asn Arg Glu Lys
2049             485             490             495
2051 Arg Glu Lys Glu Gly Tyr Phe Asp Leu Pro Gly Thr Leu Asp Met Lys
2052         500             505             510
2054 Leu Gln Glu Leu Phe Glu Lys Arg Lys Gln Lys His Glu Ala Glu Gln
2055         515             520             525
2057 Lys Ala Arg Ile Glu Lys Ala Leu Leu Gln Lys Ser Glu Gln Gln Glu
2058     530             535             540
2060 Lys Arg Val Glu Glu Arg Lys Gln Glu Glu Lys Arg Gln Ala Gln Asp
2061 545             550             555             560
2063 Lys Ile Ala Lys Gln Val Glu Ile Ala Lys Glu Met Gln Arg Val Glu
2064             565             570             575
2066 Glu Ile Arg Gln Arg Glu Lys Gln Leu Ala Ile Gln Leu Gln Glu Glu
2067         580             585             590
2069 Glu Lys Lys Gln Gln Glu Glu Lys His Leu Ser Glu Glu Lys Lys Gln
2070         595             600             605
2072 Ala Glu Gln Lys Gln Lys Ala Glu Glu Lys Val Ala Gln Glu Arg Leu
```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/854,864

DATE: 10/04/2001

TIME: 08:21:00

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

2073	610				615				620				
2075	Asp	Ile	Glu	Gln	Gln	Lys	Ala	Tyr	Glu	Glu	Met	Ala	Lys	Arg	Glu	Ala
2076	625				630				635				640
2078	Glu	Ala	Ser	Lys	Asn	Val	Leu	Leu	Lys	Ala	Ile	Asp	Glu	Glu	Arg	Pro
2079				645				650				655
2081	Lys	Val	Glu	Thr	Asp	Pro	Leu	Phe	Arg	Thr	Lys	Leu	Lys	Tyr	Ile	Asn
2082			660				665				670
2084	Gln	Asp	Asp	Tyr	Ala	Gly	Ala	Asn	Tyr	Phe	Phe	Asn	Lys	Val	Gly	Leu
2085			675				680				685
2087	Asn	Thr	Lys	Gly	His	Gln	Lys	Val	Asn	Val	Leu	Gly	Asp	Asn	Tyr	Phe
2088		690				695				700
2090	Asp	His	Gln	Val	Ile	Thr	Arg	Ser	Ile	Glu	Lys	Lys	Val	Asp	Asn	His
2091	705				710				715				720
2093	Leu	Asn	Gln	Lys	Tyr	Asn	Leu	Ser	Asp	Val	Glu	Leu	Val	Lys	Gln	Leu
2094				725				730				735
2096	Met	Asp	Asn	Ser	Thr	Thr	Gln	Ala	Gln	Glu	Leu	Asp	Leu	Lys	Leu	Gly
2097			740				745				750
2099	Ala	Ala	Leu	Thr	Lys	Glu	Gln	Gln	Ala	Asn	Leu	Thr	Gln	Asp	Ile	Val
2100		755				760				765
2102	Trp	Tyr	Val	Lys	Thr	Lys	Val	Lys	Gly	Lys	Asp	Val	Phe	Val	Pro	Lys
2103		770				775				780
2105	Val	Tyr	Phe	Ala	Ser	Glu	Thr	Leu	Val	Glu	Ala	Gln	Lys	Leu	Gln	Gly
2106	785				790				795				800
2108	Leu	Gly	Thr	Gly	Thr	Ile	Arg	Val	Gly	Glu	Ala	Lys	Ile	Lys	Ala	Lys
2109				805				810				815
2111	Asp	Val	Val	Asn	Thr	Gly	Thr	Leu	Ala	Gly	Arg	Lys	Leu	Asn	Val	Glu
2112			820				825				830
2114	Ala	Ser	Asn	Lys	Ile	Lys	Asn	Gln	Gly	Ser	Ile	Leu	Ser	Thr	Gln	Glu
2115			835				840				845
2117	Thr	Arg	Leu	Val	Gly	Arg	Lys	Gly	Ile	Glu	Asn	Val	Ser	Arg	Ser	Phe
2118		850				855				860
2120	Ala	Asn	Asp	Glu	Leu	Gly	Val	Thr	Ala	Gln	Arg	Ser	Glu	Ile	Lys	Thr
2121	865				870				875				880
2123	Glu	Gly	His	Leu	His	Leu	Glu	Thr	Asp	Lys	Asp	Ser	Thr	Ile	Asp	Val
2124				885				890				895
2126	Gln	Ala	Ser	Asp	Ile	Lys	Ala	Lys	Thr	Ser	Phe	Val	Lys	Thr	Gly	Asp
2127			900				905				910
2129	Val	Asn	Leu	Lys	Asn	Thr	Tyr	Asn	Thr	Lys	His	Ala	Tyr	Arg	Glu	Lys
2130			915				920				925
2132	Phe	Ser	Pro	Ser	Ala	Leu	Gln	Val	Ala	Glu	Leu	Asp	Val	Ala	Gly	Leu
2133		930				935				940
2135	Lys	Val	Pro	Leu	Leu	Gly	Val	Ser	Ser	Pro	Ser	Ser	Tyr	Ser	Glu	His
2136	945				950				955				960
2138	Thr	Ser	Glu	Ala	Thr	Ser	Glu	Gly	Ser	Ile	Phe	Glu	Val	Gly	His	Leu
2139				965				970				975
2141	His	Leu	Ala	Val	Asp	Arg	Asp	Val	Asn	Gln	Ala	Gly	Ser	Lys	Ile	Lys
2142			980				985				990
2144	Ala	Lys	Tyr	Thr	Thr	Gly	Val	Val	Lys	Gly	Asn	Phe	Asn	Thr	Glu	Ala
2145			995				1000				1005

```
         2147 Gly Lys Asn Ile Lys His Val Glu Lys Glu Glu Tyr Ser Ser Gln Leu
         2148     1010              1015              1020
         2150 Phe Ala Ser Ala His Ala Ser Gly Gly Gly Thr Ser Val Arg Tyr Asp
E-->     2151 025                  1030              1035              1040
         2153 Tyr Asn Ser Gln Asp Gly Gly Asn Ala Ser Val Gly Val Pro Thr Asn
         2154                 1045              1050              1055
         2156 His Thr Gly Val Gly Ala Glu Ala Gly Met Ser Phe Thr His Thr Lys
         2157         1060              1065              1070
         2159 Asp Lys Glu Thr Leu Leu Thr His Thr Asn Ser Glu Leu Gln Val Lys
         2160         1075              1080              1085
         2162 His Gly Lys Leu His Val Leu Gly Tyr Ala Asp Ile Gly Gly Val Asp
         2163     1090              1095              1100
         2165 Ile Asn Thr Lys Leu Pro Glu Asp Ala Gln Ser Lys Ala Gln Lys Glu
E-->     2166 105                  1110              1115              1120
         2168 Ile Ala Ala Ser Lys Pro Glu Lys Thr Glu Gln Ser Ala Gln Asp Val
         2169             1125              1130              1135
         2171 Ala Gln Ala Gln Ser Asn Ala Asn Lys Asp Lys Glu Asn Lys Ala Pro
         2172         1140              1145              1150
         2174 Glu Ile Lys Glu Leu Ser Glu Ala Glu Ile Ala Asp Leu Met Ser Glu
         2175     1155              1160              1165
         2177 Lys Ser Lys Ala Tyr Phe Asp Asp Phe Ala Glu Gln Ala Lys Lys Ala
         2178     1170              1175              1180
         2180 Pro Glu Asn Asn Arg Phe Glu Leu Ser Ala Lys Glu Ile Lys Ser Ser
E-->     2181 185                  1190              1195              1200
         2183 Lys Gln Lys Asp Gln Tyr Asp His Glu Ser Glu Arg Thr Thr Phe Lys
         2184         1205              1210              1215
         2186 Val Gly Pro Glu Ala Glu Ala His Ser Ala Val Ala Asp Met Val Ser
         2187         1220              1225              1230
         2189 His Leu Val Lys Glu Tyr Arg Asp Ala Gln Asn Gly Thr Lys Gln Asp
         2190     1235              1240              1245
         2192 Gly Thr Val Ala Leu Gln His Ala Ser Asp Val Leu Asn Ile Val Thr
         2193     1250              1255              1260
         2195 Gly Asp Leu Ala Gly Ser Ser Ala Lys Leu Ser Val Glu Arg Thr His
E-->     2196 265                  1270              1275              1280
         2198 Glu Thr Lys Arg Thr Thr Glu Thr Gly Asp Ile Val Thr Lys Ile Gly
         2199         1285              1290              1295
         2201 Gly Asn Val Thr Leu Ser Ala Arg Ser Gly Ser Val Asn Leu Lys Asn
         2202         1300              1305              1310
         2204 Val Gln Ser Asp Glu Gln Ala Asn Leu Thr Leu Arg Ala Lys Glu Asp
         2205     1315              1320              1325
         2207 Val Asn Val Leu Ser Gly Glu Lys Thr Arg Glu Thr Thr Glu Thr Val
         2208     1330              1335              1340
         2210 Ser Arg Gln Lys Leu Ser His Gly Val Asn Ala Gly Cys Ser Met Met
E-->     2211 345                  1350              1355              1360
         2213 Ser Gly Ala Cys Thr Ala Gly Val Ser Thr Ser Leu Glu Gly Asn Glu
         2214             1365              1370              1375
         2216 Ser Tyr Thr Ser Glu Arg Glu Thr Ala Gln Asn Asn Ser Phe Leu Lys
         2217     1380              1385              1390
         2219 Ala Arg Asn Met Lys Val Glu Ala Gly Arg Asp Phe Asn Val Val Ser
```

(handwritten annotations)

should be 1345

p'

Misaligned amino numbering

The first digit in the number must be aligned directly underneath the ~~seq second~~ first alpha character of the amino abbreviation.

RAW SEQUENCE LISTING   DATE: 10/04/2001
PATENT APPLICATION: US/09/854,864   TIME: 08:21:00

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

```
2220        1395              1400              1405
2222 Ser Asn Ile Asp Ala Asp Lys Leu Asp Leu His Val Lys Gly Lys Thr
2223        1410              1415              1420
2225 Asn Val Val Ser Lys Gln Asp Thr Leu Gln Lys Val Thr His Gly Val
E--> 2226 425              1430              1435              1440
2228 Asp Tyr Asn Leu Ser Ala Gly Val Ala Leu Ser Ser Ala Thr Ile Ala
2229        1445              1450              1455
2231 Thr Pro Thr Gly Asn Val Gly Phe Gly Tyr Thr Asn Glu Thr Glu Ser
2232        1460              1465              1470
2234 Lys Arg Thr Val Asn Gln Gln Ala Gly Ile Lys Ala Asn Lys Ile Thr
2235        1475              1480              1485
2237 Gly Gln Thr His Asp Leu Asn Leu Glu Gly Gly Tyr Leu Val Ser Asn
2238        1490              1495              1500
2240 Asp Lys Asp Asn Gln Leu Lys Val Thr Gly Asp Val Thr Thr Lys Ala
E--> 2241 505              1510              1515              1520
2243 Leu His Asp Gln His Asp Lys Asp Gly Gly Thr Phe Gly Leu Ser Val
2244        1525              1530              1535
2246 Gly Ile Ser Glu Arg Gly Thr Thr Ala Phe Asn Val Arg Gly Gly Arg
2247        1540              1545              1550
2249 Ala Glu Gln Lys His Tyr Asn Ala Thr Gln Lys Ser Thr Leu Ser Gly
2250        1555              1560              1565
2252 Val Asp Thr Ser Gln Ala Asn Val Ser Gly Gln Val Asn Thr Asp Leu
2253        1570              1575              1580
2255 Thr Lys Ala Lys Ala Val Thr Arg Asp Asp Thr Tyr Ala Ser Thr Gln
E--> 2256 585              1590              1595              1600
2258 Phe Ser Phe Glu Val Ala Asp Ile Val Glu Leu Gly Gln Arg Ala Lys
2259        1605              1610              1615
2261 Asn Lys Leu Ser Ala Pro Asn Asn Asp Thr Asp Met Ala Ser Gly Ser
2262        1620              1625              1630
2264 Thr Leu Arg Ser Arg Ser Thr Thr Glu Glu Ala Asp Val Pro Thr Thr
2265        1635              1640              1645
2267 Arg Ser Arg Val Thr Asp Glu Ala Asp Ser Val Ser Val Lys Asn Pro
2268        1650              1655              1660
2270 Ile Tyr Glu Ser Ala Asp Ala Val Val Pro Thr Pro Arg Ser Arg Asn
E--> 2271 665              1670              1675              1680
2273 Val Asp Ser Thr Asp Leu Val Asp Asn Pro Leu Tyr Ala Ser Ala Thr
2274        1685              1690              1695
2276 Thr Lys Ala Asn Ile His Asp Tyr Glu Glu Ile Pro Ala Val Tyr Ser
2277        1700              1705              1710
2279 Lys Val Gly Asp Asn Asn Ala Asp Leu Val Arg His Lys Thr Ala Thr
2280        1715              1720              1725
2282 Ser Asp Glu His Leu Tyr Ala Glu Ile Asn Glu Pro Thr Tyr Ser Arg
2283        1730              1735              1740
2285 Val Gly Asp Lys Asn Ala Asp Met Arg Arg His Asn Ala Ala Gly Thr
E--> 2286 745              1750              1755              1760
2288 Thr Asp Tyr Ala Asp Val Val Gln Ala His Thr Arg Lys Ala Asp Asp
2289        1765              1770              1775
2291 Pro Leu Pro Ala Leu Pro Asn Gln Gly Lys Ala Arg Thr Val Asn Asp
2292        1780              1785              1790
```

```
     2294 Gly Ser Glu His Ile Tyr Thr Asp Ile Ser Asp Val Gly Thr Gln Thr
     2295         1795                1800                1805
     2297 Lys Ala Ile Asp Ser Thr Tyr Ala Thr Val Gly Met Pro Lys Ala Asn
     2298         1810                1815                1820
     2300 Ala Val Asn Leu Ile Gly Gln Asn Gly Leu Gly Ser Ile Tyr His Ser
E--> 2301  825                1830                1835                1840
     2303 Pro Asp Ser Ala Tyr Lys Thr Trp Gln Leu Leu Asp Gln Phe Ala Asn
     2304                1845                1850                1855
     2306 Lys Gly Gly Asp Ala Val Phe Leu Arg Pro Ala Thr Glu Met Lys Cys
     2307         1860                1865                1870
     2309 Ala Gly Ala Pro Leu Lys Tyr Thr Phe Ile Val Arg Asp Tyr Leu Leu
     2310         1875                1880                1885
     2312 Arg Arg His Thr Leu Asp Lys Ser Arg Leu Phe Tyr Asn Ala His Asn
     2313         1890                1895                1900
     2315 Lys Thr Leu Phe Ser Val Pro Ile Val Asp Ala Lys Val Lys Met Leu
E--> 2316  905                1910                1915                1920
     2318 Phe Ala Glu Lys Asn Ile Gln Val Asn Tyr Asp Arg Ser Leu Thr Ala
     2319                1925                1930                1935
     2321 Ile Asp Leu Ser Lys Arg Ile Ala Thr Phe Asn Ser Pro Glu Gly Val
     2322                1940                1945                1950
     2324 Val Glu Val Pro Tyr Asp Phe Ile Asn Val Val Pro Pro Met Arg Ala
     2325         1955                1960                1965
     2327 Pro Asp Ala Val Arg Gln Ser Ala Leu Ala Trp Gln Glu Gly Lys Trp
     2328         1970                1975                1980
     2330 Ala Asn Asp Gly Trp Val Glu Val Glu Lys His Thr Leu Arg His Arg
E--> 2331  985                1990                1995                2000
     2333 Arg Tyr Ala Asn Val Phe Ala Val Gly Asp Val Ala Gly Val Pro Lys
     2334                2005                2010                2015
     2336 Gly Lys Thr Ala Ala Ser Val Lys Trp Gln Val Pro Val Ala Val Ala
     2337         2020                2025                2030
     2339 His Leu Leu Ala Glu Leu Glu Gly Lys Pro Cys Asp Glu Ile Tyr Asn
     2340         2035                2040                2045
     2342 Gly Tyr Thr Ser Cys Pro Leu Ile Thr Gln Leu Gly Lys Gly Met Leu
     2343         2050                2055                2060
     2345 Val Glu Phe Asp Tyr Asn Asn His Leu Thr Pro Ser Phe Pro Gly Val
E--> 2346  065                2070                2075                2080
     2348 Ile Ala Pro Leu Glu Glu Leu Trp Ala Thr Trp Ala Ile Lys Thr Leu
     2349                2085                2090                2095
     2351 Gly Leu Lys Pro Thr Tyr Leu Gly Met Leu Arg Gly Leu Ala
     2352         2100                2105                2110
     3855 <210> SEQ ID NO: 28
     3856 <211> LENGTH: 450
     3857 <212> TYPE: PRT
     3858 <213> ORGANISM: Pasteurella multocida
     3860 <400> SEQUENCE: 28
     3861 Ser Thr Lys Val Gly Tyr Asp Ile Asn Asn Thr His Arg Phe Thr Leu
     3862  1                 5                   10                  15
     3864 Phe Leu Glu Asp Arg Arg Glu Lys Lys Leu Thr Glu Glu Lys Thr Leu
     3865         20                  25                  30
```

[Handwritten annotation:] Errored: At locations 125 through location 151 there are unknowns, "Xaas". Xaas must be enumerated in fields 221, 222 and 223

[Handwritten annotation:] Misaligned amino numbering. First number must align directly beneath first letter

RAW SEQUENCE LISTING   DATE: 10/04/2001
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Input Set : C:\Crf3\Datahold\09545199
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```
      3867 Gly Leu Ser Asp Ala Val Arg Phe Ala Asn Asp Gln Thr Pro Tyr Leu
      3868         35              40                  45
      3870 Arg Tyr Gly Ile Glu Tyr Arg Tyr Asn Gly Leu Ser Trp Leu Glu Thr
      3871     50              55                  60
      3873 Val Lys Leu Phe Leu Ala Lys Gln Lys Ile Glu Gln Arg Ser Ala Leu
      3874 65              70                  75                      80
      3876 Gln Glu Phe Asp Ile Asn Asn Arg Asn Lys Leu Asp Ser Thr Met Ser
      3877             85                  90                      95
      3879 Phe Val Tyr Leu Gln Arg Gln Asn Ile Ala Arg Gly Glu Phe Ser Thr
      3880             100                 105                 110
E--> 3882 Ser Pro Leu Tyr Trp Gly Pro Ser Arg His Arg Leu Xaa Ala Lys Phe
      3883         115                 120                 125
E--> 3885 Glu Phe Arg Asp Xaa Phe Leu Glu Asn Met Asn Lys Xaa Phe Thr Phe
      3886         130                 135                 140
E--> 3888 Arg Pro Trp Gln Ile Asn Xaa Phe Arg Gln Gln Gly Arg Asn Asn Tyr
      3889 145                 150                 155                 160
      3891 Thr Glu Val Phe Pro Val Lys Ser Arg Glu Phe Ser Phe Ser Leu Met
      3892             165                 170                 175
      3894 Asp Asp Ile Lys Ile Gly Glu Leu Leu His Leu Gly Leu Gly Gly Arg
      3895             180                 185                 190
      3897 Trp Asp His Tyr Asn Tyr Lys Pro Leu Leu Asn Ser Gln His Asn Ile
      3898         195                 200                 205
      3900 Asn Arg Thr Gln Arg Leu Pro Tyr Pro Lys Thr Ser Ser Lys Phe Ser
      3901     210                 215                 220
      3903 Tyr Gln Leu Ser Leu Glu Tyr Gln Leu His Pro Ser His Gln Ile Ala
      3904 225                 230                 235                 240
      3906 Tyr Arg Leu Ser Thr Gly Phe Arg Val Pro Arg Val Glu Asp Leu Tyr
      3907             245                 250                 255
      3909 Phe Glu Asp Arg Gly Lys Ser Ser Ser Gln Phe Leu Pro Asn Pro Asp
      3910             260                 265                 270
      3912 Leu Gln Pro Glu Thr Ala Leu Asn His Glu Ile Ser Tyr Arg Phe Gln
      3913         275                 280                 285
      3915 Asn Gln Tyr Ala His Phe Ser Val Gly Leu Phe Arg Thr Arg Tyr His
      3916     290                 295                 300
      3918 Asn Phe Ile Gln Glu Arg Glu Met Thr Cys Asp Lys Ile Pro Tyr Glu
      3919 305                 310                 315                 320
      3921 Tyr Asn Arg Thr Tyr Gly Tyr Cys Thr His Asn Thr Tyr Val Met Phe
      3922             325                 330                 335
      3924 Val Asn Glu Pro Glu Ala Val Ile Lys Gly Val Glu Val Ser Gly Ala
      3925             340                 345                 350
      3927 Leu Asn Gly Ser Ala Phe Gly Leu Ser Asp Gly Leu Thr Phe Arg Leu
      3928             355                 360                 365
      3930 Lys Gly Ser Tyr Ser Lys Gly Gln Asn His Asp Gly Asp Pro Leu Lys
      3931         370                 375                 380
      3933 Ser Ile Gln Pro Trp Thr Val Val Thr Gly Ile Asp Tyr Glu Thr Glu
      3934 385                 390                 395                 400
      3936 Gly Trp Ser Val Ser Leu Ser Gly Arg Tyr Ser Ala Ala Lys Lys Ala
      3937             405                 410                 415
      3939 Lys Asp Ala Ile Glu Thr Glu Tyr Thr His Asp Lys Lys Val Val Lys
```

RAW SEQUENCE LISTING

DATE: 10/04/2001

PATENT APPLICATION: US/09/854,864

TIME: 08:21:01

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

```
3940            420              425              430
3942 Gln Trp Pro His Leu Ser Pro Ser Tyr Phe Val Val Asp Phe Thr Gly
3943            435              440              445
3945 Gln Val
3946       450
5300 <210> SEQ ID NO: 36
5301 <211> LENGTH: 302
5302 <212> TYPE: PRT
5303 <213> ORGANISM: Pasteurella multocida
5305 <400> SEQUENCE: 36
5306 Met Asn Ile Leu Phe Val Ser Asp Asp Val Tyr Ala Lys His Leu Val
5307  1               5               10              15
5309 Val Ala Ile Lys Ser Ile Ile Asn His Asn Glu Lys Gly Ile Ser Phe
5310            20              25              30
5312 Tyr Ile Phe Asp Leu Gly Ile Lys Asp Glu Asn Lys Arg Asn Ile Asn
5313            35              40              45
5315 Asp Ile Val Ser Ser Tyr Gly Ser Glu Val Asn Phe Ile Ala Val Asn
5316       50              55              60
5318 Glu Lys Glu Phe Glu Ser Phe Pro Val Gln Ile Ser Tyr Ile Ser Leu
5319  65              70              75              80
5321 Ala Thr Tyr Ala Arg Leu Lys Ala Ala Glu Tyr Leu Pro Asp Asn Leu
5322            85              90              95
5324 Asn Lys Ile Ile Tyr Leu Asp Val Asp Val Leu Val Phe Asn Ser Leu
5325            100             105             110
5327 Glu Met Leu Trp Asn Val Asp Val Asn Asn Phe Leu Thr Ala Ala Cys
5328            115             120             125
5330 Tyr Asp Ser Phe Ile Glu Asn Glu Lys Ser Glu His Lys Lys Ser Ile
5331       130             135             140
5333 Ser Met Ser Asp Lys Glu Tyr Tyr Phe Asn Ala Gly Val Met Leu Phe
5334 145             150             155             160
5336 Asn Leu Asp Glu Trp Arg Lys Met Asp Val Phe Ser Arg Ala Leu Asp
5337            165             170             175
5339 Leu Leu Ala Met Tyr Pro Asn Gln Met Ile Tyr Gln Asp Gln Asp Ile
5340            180             185             190
5342 Leu Asn Ile Leu Phe Arg Asn Lys Val Cys Tyr Leu Asp Cys Arg Phe
5343            195             200             205
```

There are unknown at locations 219 through 274.
Unknown must be enumerated ~ in fields 221, 222 and 223.

```
E--> 5345 Asn Phe Met Pro Asn Gln Leu Glu Arg Ile (Xaa) Gln Tyr His Lys Gly
5346       210             215             220
E--> 5348 Lys (Xaa) Ser Asn Leu His Ser Leu Glu Lys Thr Thr Met Pro Val Val
5349 225             230             235             240
5351 Ile Ser His Tyr Cys Gly Pro Glu Lys Ala Trp His Ala Asp Cys Lys
5352            245             250             255
E--> 5354 His Phe Asn Val Tyr Phe Tyr Gln Lys Ile Leu Ala (Xaa)(Xaa) Ser Arg
5355            260             265             270
E--> 5357 Gly (Xaa) Asp Lys Glu Arg Val Leu Ser Ile Lys Thr Tyr Leu Lys Ala
5358       275             280             285
5360 Leu Ile Arg Arg Ile Arg Tyr Lys Phe Lys Tyr Gln Val Tyr
5361       290             295             300
5472 <210> SEQ ID NO: 38
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RAW SEQUENCE LISTING   DATE: 10/04/2001
PATENT APPLICATION: US/09/854,864   TIME: 08:21:01

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

```
     5473 <211> LENGTH: 166
     5474 <212> TYPE: PRT
     5475 <213> ORGANISM: Pasteurella multocida
     5477 <400> SEQUENCE: 38
     5478 Leu Asn Lys Ala Gly Lys Ile Gln Tyr Val Leu Leu Lys Gly Asn Gln
     5479   1               5                  10                  15
     5481 Gly His Pro Asp Ala Glu Ala Arg Thr Lys Phe Val Ile Lys Glu Leu
     5482              20                  25                  30
E--> 5484 Xaa Asn Lys Gly Ile Gln Asp Glu Gln Leu Phe Ile Asp Thr Gly Met
     5485              35                  40                  45
     5487 Trp Asp Ala Ala Leu Ala Lys Asp Lys Met Asp Ala Trp Leu Ser Ser
     5488          50                  55                  60
     5490 Ser Lys Ala Asn Gln Ile Glu Val Ile Ile Ala Asn Asn Asp Gly Met
     5491  65                  70                  75                  80
     5493 Ala Met Gly Ala Leu Glu Ala Thr Lys Ala His Gly Lys Lys Leu Pro
     5494              85                  90                  95
E--> 5496 Ile Phe Xaa Val Xaa Ala Leu Pro Glu Val Leu Gln Leu Ile Lys Lys
     5497             100                 105                 110
     5499 Gly Glu Ile Ala Gly Thr Val Leu Asn Asp Gly Val Asn Gln Gly Lys
     5500             115                 120                 125
     5502 Ala Val Val Gln Leu Ser Asn Asn Leu Ala Lys Gly Lys Pro Ala Thr
     5503         130                 135                 140
     5505 Glu Gly Thr Lys Trp Gln Leu Lys Arg Ser Cys Pro Thr Tyr Pro Leu
     5506 145                 150                 155                 160
     5508 Cys Trp Cys Gly Cys Gly
     5509                 165
    11512 <210> SEQ ID NO: 103
    11513 <211> LENGTH: 1643
    11514 <212> TYPE: PRT
    11515 <213> ORGANISM: Pasteurella multocida
    11517 <400> SEQUENCE: 103
    11518 Met Asn Lys Asn Arg Tyr Lys Leu Ile Phe Ser Gln Val Lys Gly Cys
    11519   1               5                  10                  15
    11521 Leu Val Pro Val Ala Glu Cys Ile Asn Ser Ala Ile Ser Asn Gly Ser
    11522              20                  25                  30
    11524 Ser Asp Ser Thr Ser Thr Ser Glu Gln Val Glu Glu Glu Pro Phe Leu
    11525              35                  40                  45
    11527 Leu Glu Gln Tyr Ser Leu Ser Ser Val Ser Leu Leu Val Lys Ser Thr
    11528          50                  55                  60
    11530 Phe Asn Pro Val Ser Tyr Ala Met Gln Leu Thr Trp Lys Gln Leu Ser
    11531  65                  70                  75                  80
    11533 Ile Leu Phe Leu Thr Val Ile Ser Val Pro Val Leu Ala Glu Gly Lys
    11534              85                  90                  95
    11536 Gly Asp Glu Arg Asn Gln Leu Thr Val Ile Asp Asn Ser Asp His Ile
    11537             100                 105                 110
    11539 Lys Leu Asp Ala Ser Asn Leu Ala Gly Asn Asp Lys Thr Lys Ile Tyr
    11540             115                 120                 125
    11542 Gln Ala Glu Asn Lys Val Leu Val Ile Asp Ile Ala Lys Pro Asn Gly
    11543         130                 135                 140
```

[Handwritten annotation, top right:] There are unknowns (Xaas) found at locations 33 through 101. Mandatory descriptions are required in fields 221, 222 and 223.

[Handwritten annotation, middle:] An unknown is located in position 1632; Description of unknowns is required in fields 221, 222 and 223

RAW SEQUENCE LISTING   DATE: 10/04/2001
PATENT APPLICATION: US/09/854,864   TIME: 08:21:02

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

```
11545 Lys Gly Ile Ser Asp Asn Arg Phe Glu Lys Phe Asn Ile Pro Asn Ser
11546 145               150               155               160
11548 Ala Val Phe Asn Asn Asn Gly Thr Glu Ala Gln Ala Arg Ser Thr Leu
11549               165               170               175
11551 Ile Gly Tyr Ile Pro Gln Asn Gln Asn Leu Arg Gly Gly Lys Glu Ala
11552               180               185               190
11554 Asp Val Ile Leu Asn Gln Val Thr Gly Pro Gln Glu Ser Lys Ile Val
11555               195               200               205
11557 Gly Ala Leu Glu Val Leu Gly Lys Lys Ala Asp Ile Val Ile Ala Asn
11558       210               215               220
11560 Gln Asn Gly Ile Thr Leu Asn Gly Val Arg Thr Ile Asn Ser Asp Arg
11561 225               230               235               240
11563 Phe Val Ala Thr Thr Ser Glu Leu Ile Asp Pro Asn Gln Met Met Leu
11564               245               250               255
11566 Lys Val Thr Lys Gly Asn Val Ile Ile Asp Ile Asp Gly Phe Ser Thr
11567               260               265               270
11569 Asp Gly Leu Lys Tyr Leu Asp Ile Ile Ala Lys Lys Ile Glu Gln Lys
11570               275               280               285
11572 Gln Ser Ile Thr Ser Gly Asp Asn Ser Glu Ala Lys Thr Asp Val Thr
11573       290               295               300
11575 Leu Ile Ala Gly Ser Ser Glu Tyr Asp Leu Ser Lys His Glu Leu Lys
11576 305               310               315               320
11578 Lys Thr Ser Gly Glu Asn Val Ser Asn Asp Val Ile Ala Ile Thr Gly
11579               325               330               335
11581 Ser Ser Thr Gly Ala Met His Gly Lys Asn Ile Lys Leu Ile Val Thr
11582               340               345               350
11584 Asp Lys Gly Ala Gly Val Lys His Asp Gly Ile Ile Leu Ser Glu Asn
11585       355               360               365
11587 Asp Ile Gln Ile Glu Met Asn Glu Gly Asp Leu Glu Leu Gly Asn Thr
11588       370               375               380
11590 Ile Gln Gln Thr Val Val Lys Lys Asp Arg Asn Ile Arg Ala Lys Lys
11591 385               390               395               400
11593 Lys Ile Glu Val Lys Asn Ala Asn Arg Val Phe Val Gly Ser Gln Thr
11594               405               410               415
11596 Lys Ser Asp Glu Ile Ser Leu Glu Ala Lys Gln Val Lys Ile Arg Lys
11597               420               425               430
11599 Asn Ala Glu Ile Arg Ser Thr Thr Gln Ala Lys Ile Val Ala Lys Gly
11600       435               440               445
11602 Ala Leu Ser Ile Glu Gln Asn Ala Lys Leu Val Ala Lys Lys Ile Asp
11603       450               455               460
11605 Val Ala Thr Glu Thr Leu Thr Asn Ala Gly Arg Ile Tyr Gly Arg Glu
11606 465               470               475               480
11608 Val Lys Leu Asp Thr Asn Asn Leu Ile Asn Asp Lys Glu Ile Tyr Ala
11609               485               490               495
11611 Glu Arg Lys Leu Ser Ile Leu Thr Lys Gly Lys Asp Leu Glu Ile Ile
11612               500               505               510
11614 Gln Asp Arg Tyr Leu Ser Pro Leu Met Arg Val Lys Ser Ser Val Arg
11615       515               520               525
11617 Phe Leu Gly Ser Pro Phe Phe Ser Ile Ser Pro Ser Met Leu Ala Ser
```

RAW SEQUENCE LISTING   DATE: 10/04/2001
PATENT APPLICATION: US/09/854,864   TIME: 08:21:02

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

```
11618      530                  535                  540
11620 Leu Ser Ala Gln Phe Lys Pro Gly Phe Val Asn Lys Gly Leu Ile Glu
11621 545                  550                  555                  560
11623 Ser Ala Gly, Ser Ala Glu Leu Thr Phe Lys Glu Lys Thr Ser Phe Leu
11624                  565                  570                  575
11626 Thr Glu Gly Asn Asn Phe Ile Arg Ala Lys Asp Ala Leu Thr Ile Asn
11627                  580                  585                  590
11629 Ala Gln Asn Ile Glu Ile Asp Lys Asn Gln Asp Ile Gln Leu Gly Ala
11630                  595                  600                  605
11632 Asn Ile Thr Leu Asn Val Glu Glu Asn Phe Val Asn Arg Ala Gly Thr
11633      610                  615                  620
11635 Leu Ala Thr Gly Lys Thr Leu Thr Ile Asn Thr Glu Ser Gly Ser Ile
11636 625                  630                  635                  640
11638 Tyr Asn Leu Gly Gly Thr Leu Gly Ala Gly Lys Ser Leu Lys Leu Thr
11639                  645                  650                  655
11641 Ala Lys Ser Thr Glu Glu Gly Met Gly Asn Ile Val Asn Gln Glu Asn
11642                  660                  665                  670
11644 Gly Leu Phe His Thr Leu Gly Asn Met Met Leu Glu Ala Glu Arg Ser
11645                  675                  680                  685
11647 Val Tyr Asn Ile Gly Asp Ile Tyr Ala Ser Lys Lys Leu Thr Val His
11648      690                  695                  700
11650 Thr His Asn Leu Ile Asn Asp Val Arg Leu Ser Gly Asn Val Ser Tyr
11651 705                  710                  715                  720
11653 Lys Pro Ile Gly Ser Ser Arg Asp Tyr Asp Ile Ser Arg Val Ala Val
11654                  725                  730                  735
11656 His Gly Trp His Asn Asn Val Tyr Lys Leu Asn Leu Asn Leu Gln Glu
11657                  740                  745                  750
11659 Gln Asp Lys Thr Asp Ile Lys Val Val Lys Met Gly Ala Ile Arg Ser
11660                  755                  760                  765
11662 Asp Gly Asp Phe Asp Phe Lys Gly Ile Lys Ala Thr Ser Ser Glu Ser
11663      770                  775                  780
11665 Lys Pro Gln Leu Ile Asn His Gly Leu Ile Asn Val Lys Gly Thr Phe
11666 785                  790                  795                  800
11668 Asn Ala Glu Ala Asp Gln Val Val Asn Gln Met Lys Ala Phe Asn Gln
11669                  805                  810                  815
11671 Asn Ala Leu Ala Ser Val Phe Lys Asn Pro Ala Lys Ile Thr Met Tyr
11672                  820                  825                  830
11674 Tyr Gln Pro Leu Thr Arg Tyr Ile Trp Thr Pro Leu Ser Gly Asn Ala
11675                  835                  840                  845
11677 Ser Arg Glu Phe Asn Asn Leu Glu Ser Phe Leu Asp Ala Leu Phe Gly
11678      850                  855                  860
11680 Ser Thr Thr Ile Leu Lys Ser Ser Phe Tyr Ser Thr Glu Asn Phe Ser
11681 865                  870                  875                  880
11683 Ala Tyr Gln Leu Leu Ser His Ile Gln His Ser Pro Met Tyr Gln Lys
11684                  885                  890                  895
11686 Ala Met Ala Gln Val Phe Gly Ala Glu Trp His Ser Lys Ser Tyr Asp
11687                  900                  905                  910
11689 Glu Met Arg Asn Lys Trp Lys Ser Phe Lys Glu Asn Pro Thr Asp Phe
11690                  915                  920                  925
```

```
11692 Ile Tyr Tyr Pro Ser Glu Lys Ala Lys Ile Leu Ala Gly Lys Leu Glu
11693     930             935             940
11695 Gly Lys Leu Thr Thr Leu Gln Asn Gly Glu Tyr Ala Glu Arg Gly Lys
11696 945             950             955             960
11698 Phe Asp Glu Ser Ile Gln Ile Gly Lys His Gln Leu Ser Leu Pro Ser
11699             965             970             975
11701 Val Glu Leu Lys Ala Glu Phe Ser Asp Lys Glu Arg Leu Glu Glu Asp
11702         980             985             990
11704 Gly Val Asp Leu Ser Ser Ile Ala Glu Leu Leu Glu Met Pro Asn Leu
11705         995             1000            1005
11707 Phe Ile Asp Asn Ser Ile Gln Leu Glu Lys Lys Lys Leu Ser Pro Ile
11708     1010            1015            1020
11710 Glu Asp Leu Asp Glu Glu Pro Arg Lys Asn Leu Asp Ile Glu Glu Ser
11711 1025            1030            1035            1040
11713 His Ser Asn Ser Ser Asp Asp Val Leu Ser Met Asn Asp Asp Glu Ser
11714             1045            1050            1055
11716 Asp Thr Asp Asp Ser Lys Trp Ser Met Gly Asn Asp Glu Lys Glu Met
11717             1060            1065            1070
11719 Pro Asp Asp Lys Leu Gly Ile Ser Arg Asp Asp Arg Gly Asn Lys Pro
11720         1075            1080            1085
11722 Pro Arg Thr Asp Pro Thr Val Asp Tyr Leu Asn Pro Asp Glu Phe Phe
11723     1090            1095            1100
11725 Glu Asn Gly Tyr Leu Leu Asn Glu Leu Leu Gln Glu Leu Gly Glu Glu
11726 1105            1110            1115            1120
11728 Pro Leu Leu Lys Glu Gly Glu Asp His Phe Lys Arg Ser Thr Asn Leu
11729             1125            1130            1135
11731 Val Arg Leu Gly Glu Arg Asp Arg Gln Asn Arg Glu Lys Arg Glu Lys
11732         1140            1145            1150
11734 Glu Gly Tyr Phe Asp Leu Pro Gly Thr Leu Asp Met Lys Leu Gln Glu
11735         1155            1160            1165
11737 Leu Phe Glu Lys Arg Lys Gln Lys His Glu Ala Glu Gln Lys Ala Arg
11738     1170            1175            1180
11740 Ile Glu Lys Ala Leu Leu Gln Lys Ser Glu Gln Gln Glu Lys Arg Val
11741 1185            1190            1195            1200
11743 Glu Glu Arg Lys Gln Glu Glu Lys Arg Gln Ala Gln Asp Lys Ile Ala
11744             1205            1210            1215
11746 Lys Gln Val Glu Ile Ala Lys Glu Met Gln Arg Val Glu Glu Ile Arg
11747         1220            1225            1230
11749 Gln Arg Glu Lys Gln Leu Ala Ile Gln Leu Gln Glu Glu Glu Lys Lys
11750         1235            1240          · 1245
11752 Gln Gln Glu Glu Lys His Leu Ser Glu Glu Lys Lys Gln Ala Glu Gln
11753     1250            1255            1260
11755 Lys Gln Lys Ala Glu Glu Lys Val Ala Gln Glu Arg Leu Asp Ile Glu
11756 1265            1270            1275            1280
11758 Gln Gln Lys Ala Tyr Glu Glu Met Ala Lys Arg Glu Ala Glu Ala Ser
11759             1285            1290            1295
11761 Lys Asn Val Leu Leu Lys Ala Ile Asp Glu Glu Arg Pro Lys Val Glu
11762             1300            1305            1310
11764 Thr Asp Pro Leu Phe Arg Thr Lys Leu Lys Tyr Ile Asn Gln Asp Asp
```

RAW SEQUENCE LISTING   DATE: 10/04/2001
PATENT APPLICATION: US/09/854,864   TIME: 08:21:02

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

```
11765        1315              1320              1325
11767 Tyr Ala Gly Ala Asn Tyr Phe Phe Asn Lys Val Gly Leu Asn Thr Lys
11768    1330              1335              1340
11770 Gly His Gln Lys Val Asn Val Leu Gly Asp Asn Tyr Phe Asp His Gln
11771 1345              1350              1355              1360
11773 Val Ile Thr Arg Ser Ile Glu Lys Lys Val Asp Asn His Leu Asn Gln
11774            1365              1370              1375
11776 Lys Tyr Asn Leu Ser Asp Val Glu Leu Val Lys Gln Leu Met Asp Asn
11777         1380              1385              1390
11779 Ser Thr Thr Gln Ala Gln Glu Leu Asp Leu Lys Leu Gly Ala Ala Leu
11780         1395              1400              1405
11782 Thr Lys Glu Gln Gln Ala Asn Leu Thr Gln Asp Ile Val Trp Tyr Val
11783    1410              1415              1420
11785 Lys Thr Lys Val Lys Gly Lys Asp Val Phe Val Pro Lys Val Tyr Phe
11786 1425              1430              1435              1440
11788 Ala Ser Glu Thr Leu Val Glu Ala Gln Lys Leu Gln Gly Leu Gly Thr
11789            1445              1450              1455
11791 Gly Thr Ile Arg Val Gly Glu Ala Lys Ile Lys Ala Lys Asp Val Val
11792         1460              1465              1470
11794 Asn Thr Gly Thr Leu Ala Gly Arg Lys Leu Asn Val Glu Ala Ser Asn
11795         1475              1480              1485
11797 Lys Ile Lys Asn Gln Gly Ser Ile Leu Ser Thr Gln Glu Thr Arg Leu
11798    1490              1495              1500
11800 Val Gly Arg Lys Gly Ile Glu Asn Val Ser Arg Ser Phe Ala Asn Asp
11801 1505              1510              1515              1520
11803 Glu Leu Gly Val Thr Ala Gln Arg Ser Glu Ile Lys Thr Glu Gly His
11804            1525              1530              1535
11806 Leu His Leu Glu Thr Asp Lys Asp Ser Thr Ile Asp Val Gln Ala Ser
11807         1540              1545              1550
11809 Asp Ile Lys Ala Lys Thr Ser Phe Val Lys Thr Gly Asp Val Asn Leu
11810         1555              1560              1565
11812 Lys Asn Thr Tyr Asn Thr Lys His Ala Tyr Arg Glu Lys Phe Ser Pro
11813    1570              1575              1580
11815 Ser Ala Leu Gln Val Ala Glu Leu Asp Val Ala Gly Leu Lys Val Pro
11816 1585              1590              1595              1600
11818 Leu Leu Gly Val Ser Val Ser Ile Gln Phe Ile Gln Ser Ile Leu Val
11819            1605              1610              1615
11821 Arg Gln Leu Gln Glu Gly Ser Ile Phe Glu Val Gly His Leu His Xaa
11822         1620              1625              1630
11824 Ala Val Asp Arg Arg Cys Glu Pro Ser Gly Glu
11825    1635              1640
```

E--> 11821 Arg Gln Leu Gln Glu Gly Ser Ile Phe Glu Val Gly His Leu His (Xaa)

VERIFICATION SUMMARY   DATE: 10/04/2001
PATENT APPLICATION: US/09/854,864   TIME: 08:21:03

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

L:2 M:270 C: Current Application Number differs, Replaced Current Application No
L:2 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:2 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP NO
L:0 M:201 W: Mandatory field data missing, APPLICANT NAME
L:0 M:201 W: Mandatory field data missing, TITLE INVENTION
L:0 M:201 W: Mandatory field data missing, FILE REFERENCE
L:100 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:2151 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:16
M:332 Repeated in SeqNo=16   OK
L:3766 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:3767 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:3770 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:3771 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:3774 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:3775 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:3882 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:28
M:340 Repeated in SeqNo=28   OK
L:5261 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:5262 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:5273 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:5274 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:5289 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:5297 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:5345 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:36 OK
M:340 Repeated in SeqNo=36
L:5385 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:5386 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:5401 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:5402 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:5433 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:5435 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:5461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:5463 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:5484 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:38 OK
M:340 Repeated in SeqNo=38
L:5609 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39
L:6532 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47
L:9085 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:72
L:10782 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:90
L:10782 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:90
L:10782 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:90
L:10784 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:90
L:10784 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:90
L:10784 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:90
L:11503 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:102
L:11504 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:102
L:11821 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:103 OK

STATISTICS SUMMARY   DATE: 10/04/2001
PATENT APPLICATION: US/09/854,864   TIME: 08:21:03

Input Set : C:\Crf3\Datahold\09545199
Output Set: N:\CRF3\10042001\I854864.raw

Application Serial Number: US/09/854,864
Alpha or Numeric: Numeric
Application Class:
Application File Date: 09-11-2001
Art Unit: OIPE
Software Application: PatentIn
Total Number of Sequences: 165
Total Nucleotides: 169095
Total Amino Acids: 24948
Number of Errors: 24
Number of Warnings: 36
Number of Corrections: 2

MESSAGE SUMMARY

201 W: 3 (Mandatory field data missing)
258 W: 4 (Mandatory Feature missing)
270 C: 1 (Current Application Number differs)
271 C: 1 (Current Filing Date differs)
289 W: 1 (Identifier Missing or Out-Of-Order)
332 E: 14 ((32) Invalid/Missing Amino Acid Numbering)
340 W: 10 ((46) "n" or "Xaa" used: Feature required)
341 W: 28 ((46) "n" or "Xaa" used)